

HEGSA002

ULTRAKey Controller

User Manual



ISSUE	DATE	REVISIONS
1	September 2000	Initial Release
Rev A	December 2000	Added soft key and hard key default menus, hard key functions, and SETMAX key code commands.
2	December 2000	Deleted interface box between ULTRAKey and MXAT200.
Rev A	January 2001	Added model KEGSA008, changed references to MAX-1000 model numbers, revised Table 1 and Table 2, added interface box for extending cable distance between ULTRAKey and MAX-1000 or for connection to MAX-1000 RDAT200 with DB-15 connector.
Rev B	May 2001	Added a glossary and added the procedure for addressing KD6 Z-Series domes
Rev C	December 2001	Added Ethernet port setup; added LCD B/L intensity adjustment menu, corrected screen display for configuring a soft key, added Icons for the button names, added selecting a camera, selecting a monitor, programming a view, and recalling a view; added alphanumeric entry capability for MX14 or MXSYS04 subrack with an MX128E controller card, added Appendix A.
Rev D	February 2002	Added Var Freq Buzzer Configuration soft key in Hardware Configuration Menu
Rev E	December 2003	Deleted reference to models KEGSA004, KEGSA006, and KEGSA008, revised references to RD530 to KEGS5300; changed startup screen from Ultrak logo to Honeywell logo (PCN 1486); added default keycode commands 143-145; revised the Hard Key/func menu; revised config user menu; updated the worldwide offices contact page, reformatted.
Rev F	October 2004	PCN 1837 Rebranding/Firmware Revision


FCC COMPLIANCE STATEMENT

INFORMATION TO THE USER: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

	<p>USERS OF THE PRODUCT ARE RESPONSIBLE FOR CHECKING AND COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND STATUTES CONCERNING THE MONITORING AND RECORDING OF VIDEO AND AUDIO SIGNALS. HONEYWELL VIDEO SYSTEMS SHALL NOT BE HELD RESPONSIBLE FOR THE USE OF THIS PRODUCT IN VIOLATION OF CURRENT LAWS AND STATUTES.</p>
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Declaration Of Conformity

We, **Honeywell International Inc.**
165 Eileen Way
P.O. Box 9035
Syosset, NY 11791, U.S.A.

declare that our product(s):

Model number(s): **HEGSA002**

Type of equipment: **CCTV Controller**

are in conformity with the following standards:

EMC directive, 89/336/EEC

EN 61000-6-4:2001 Emissions standard and EN50130-4:1995+A1:1998 Immunity standard

EN 55022 Radiated Class A, EN 55022 Conducted Class A


EN 61000-4-2 ESD, EN 61000-4-3 RF fields, EN 61000-4-4 EFT/burst, EN 61000-4-5 Surge,

EN 61000-4-6 RF-conducted, EN 61004-11 Dips/interruptions/variatiions

Safety directive, 73/23/EEC

EN 60065:1998 Safety requirements for audio, video and similar electronics apparatus

IMPORTANT SAFEGUARDS

1. **READ INSTRUCTIONS** – All safety and operating instructions should be read before the unit is operated.
2. **RETAIN INSTRUCTIONS** – The safety and operating instructions should be retained for future reference.
3. **HEED WARNINGS** – All warnings on the unit and in the operating instructions should be adhered to.
4. **FOLLOW INSTRUCTIONS** – All operating and use instructions should be followed.
5. **CLEANING** – Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. **ATTACHMENTS** – Do not use attachments not recommended by the product manufacturer as they may result in the risk of fire, electric shock, or injury to persons.
7. **WATER AND MOISTURE** – Do not use this unit near water or in an unprotected outdoor installation, or any area which is classified as a wet location.
8. **ACCESSORIES** - Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult and serious damage to the equipment. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer. Wall or shelf mounting should follow the manufacturer's instructions and should use a mounting kit approved by the manufacturer.
9. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.
10. **VENTILATION** - Slots and openings in the cabinet and the back or bottom are provided for ventilation and to ensure reliable operation of the equipment and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. Equipment should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation, such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
11. **POWER SOURCES** – This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your product dealer or local power company. For products designed to operate from battery power or other sources, refer to the operating instructions.
12. **GROUNDING OR POLARIZATION** – The power supply supplied with this unit may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.



IMPORTANT SAFEGUARDS, CONTINUED

13. **OVERLOADING** – Do not overload outlets and extension cords as this can result in a risk of fire or electric shock.
14. **POWER-CORD PROTECTION** – Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the monitor.
15. **OBJECT AND LIQUID ENTRY** – Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.
16. **SERVICING** – Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
17. **DAMAGE REQUIRING SERVICE** – Unplug the unit from the outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power-supply cord or plug is damaged.
 - b. If liquid has been spilled, or objects have fallen into the unit.
 - c. If the unit has been exposed to rain or water.
 - d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
 - e. If the unit has been dropped or the enclosure has been damaged.
 - f. When the unit exhibits a distinct change in performance - this indicates a need for service.
18. **REPLACEMENT PARTS** – When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
19. **SAFETY CHECK** – Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.
20. **LIGHTNING AND POWER LINE SURGES** – For added protection of this unit during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the unit due to lightning and power-line surges.
21. **HEAT** – The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.
22. **INSTALLATION** – Do not install the unit in an extremely hot or humid location, or in a place subject to dust or mechanical vibration. The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.

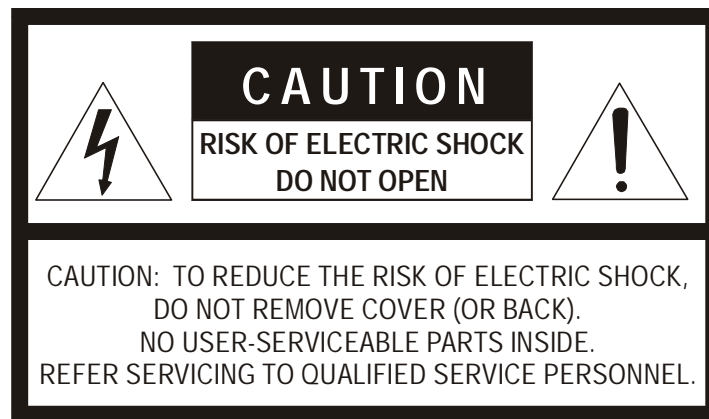
IMPORTANT SAFEGUARDS, CONTINUED

23. **WALL OR CEILING MOUNTING** – The product should be mounted to a wall or ceiling only as recommended by the manufacturer




EXPLANATION OF GRAPHICAL SYMBOLS

	The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instruction in the literature accompanying the product.

CAUTION



WARNING

	WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.
	WARNING: DO NOT INSERT ANY METALLIC OBJECT THROUGH VENTILATION GRILLS THIS PRODUCT TO RAIN OR MOISTURE.
	WARNING: THIS UNIT MUST BE OPERATED WITH A PROPERLY GROUNDED 3-PIN CONNECTION. NON-OBSERVANCE OF THIS STANDARD PRACTICE MAY RESULT IN A STATIC ELECTRICITY BUILD-UP THAT MAY RESULT IN AN ELECTRIC SHOCK WHEN EXTERNAL CONNECTIONS ARE TOUCHED.

GLOSSARY

TERM	DEFINITION
ULTRAKey	MAX-1000 keyboard with LCD touch screen. Model number HEGSA002.
Soft Keys	Keys programmed on an LCD touch screen menu.
Hard Keys	Keys with physical buttons.
MAX1000	MAX-1000 CCTV Management System.
MXAT200	MAX-1000 Control computer.
Menu	A menu defined on the ULTRAKey LCD touch screen.
MAX Key Code	The numeric key identifier to be sent to the MAX-1000 MXAT200X controller. Range = 1 to 999.
Start up menu	The "home" menu on the ULTRAKey LCD touch screen.
Keyboard address	The identifying address assigned to an ULTRAKey keyboard. Range = 1-99.
PreShot (View/Preset)	<p>A PreShot/View/Preset is a camera/lens position including, pan, tilt, zoom, and focus that can be given a title and stored in a "smart" pan and tilt unit. Up to 100 PreShots can be programmed and stored in each HD6iUltraDome.</p> <p>PreShots are programmed using a system controller. An operator can send a dome to a programmed PreShot using the controller.</p>

NOTES:

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PURCHASE INFORMATION

Date Purchased: _____

Serial Number: _____

Location Installed: _____

NOTES:

SECTION 1: INTRODUCTION

1.1 PRODUCT DESCRIPTION

The ULTRAKey is an operator interface device that connects to the MAX-1000 MXAT200 controller. The ULTRAKey is a user-friendly touch screen interface for controlling cameras, monitors, switchers, VCRs, etc. The interface has the capability of providing a descriptive touch screen soft key for each camera configured in the system. The ULTRAKey is interchangeable with a HEGS5300 (RD530) keyboard.

1.2 HARDWARE FEATURES

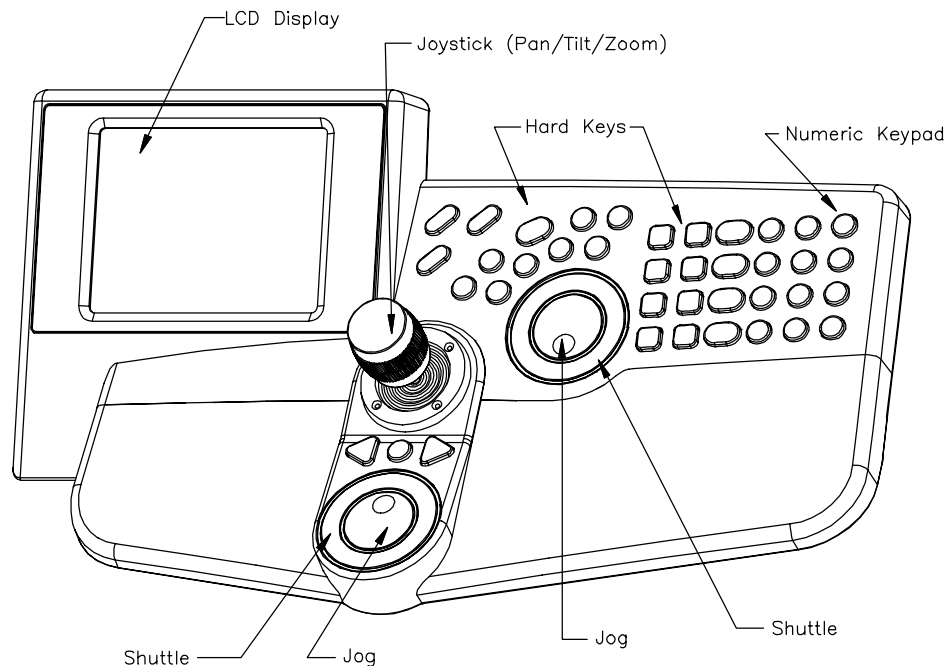


Figure 1: Front View

The ULTRAKey uses a 1/4 VGA **LCD display** that provides soft touch descriptive keys. Soft keys are displayed in menus on the LCD screen. The menus are accessible either from other soft keys or by pressing a hard key (mechanical key) on the keyboard. Status messages from the MAX-1000 controller are displayed in a message box at the top of the LCD display.

A **joystick** is provided for the pan, tilt, and zoom control of PTZ cameras. The joystick resolution can be set for high (26 increments) or low (5 increments) using the touch screen hardware configuration menu.

Two **jog/shuttle controls** are also provided. The response to the jog/shuttles is defined in the SETMAX program.

1.2 HARDWARE FEATURES, CONTINUED

Hard keys are provided for sending keystroke commands to the MXAT200 controller or selecting menus on the LCD display. The function keys can be programmed using the touch screen.

Numeric Keypad – the numeric keypad is used to enter numbers in programming screens and entering camera numbers, monitor numbers, and other device numbers.

SECTION 2: INSTALLATION

2.1 CONNECTIONS

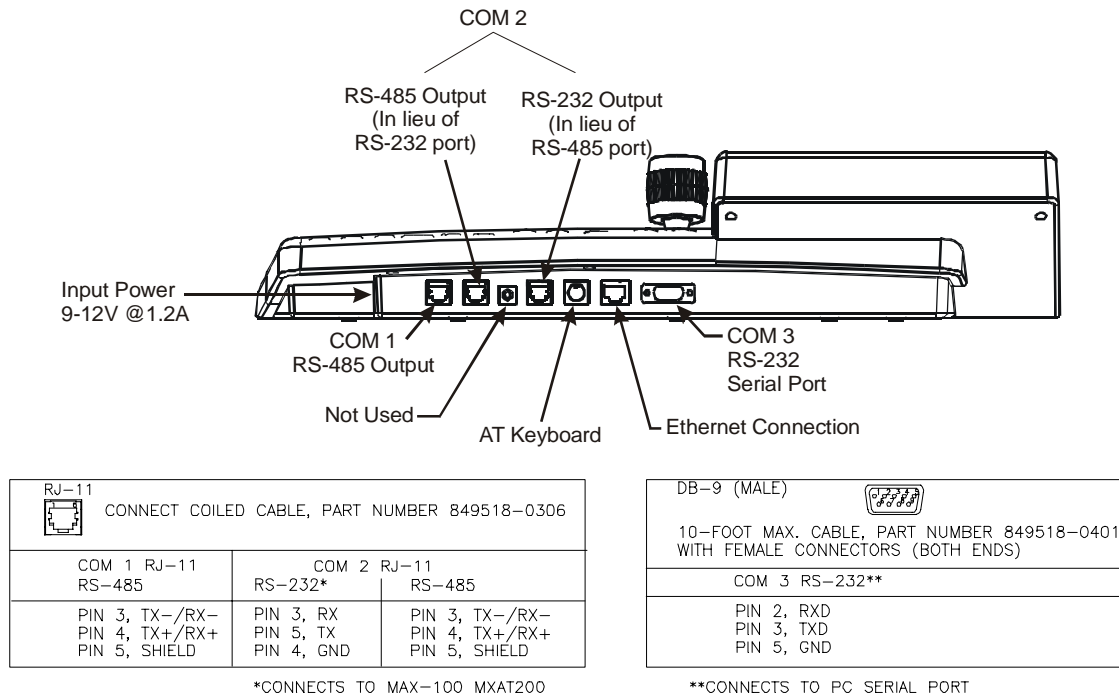


Figure 2: Rear View

Power Supply – Model HEGSA002 is provided with a U.S. power cord, part number 849518-0261.

An **AT-keyboard** can be connected to the keyboard port. The AT-keyboard can be used for entering alphanumeric text in the configuration menus.

COM1 (RS485 output port) is not used.

COM2 (RS232 serial port) on the ULTRAKey connects to the MAX-1000 MXAT200 controller to exchange commands and data. (The RS232 port on the back of the ULTRAKey is aligned with the center of the VCR pause and record keys.) A 6-foot (2-meter) coiled cable for connection between the ULTRAKey and the MXAT200 is provided. Plug one end of the coiled cable into COM2 and the other end into any of the ports on the MXAT200 configured for an RD530 keyboard.

An interface box is provided if the distance between the ULTRAKey and the MXAT200 is greater than 6 feet (~2 meters). Plug the 6-foot coiled cable into one of the RJ-11 connectors on the interface box. Using standard telephone cable with RJ-11 connectors on both ends, plug one end into an RJ-11 connector on the interface box and the other end into the MXAT200. Refer to figure 3.

2.1 CONNECTIONS, CONTINUED

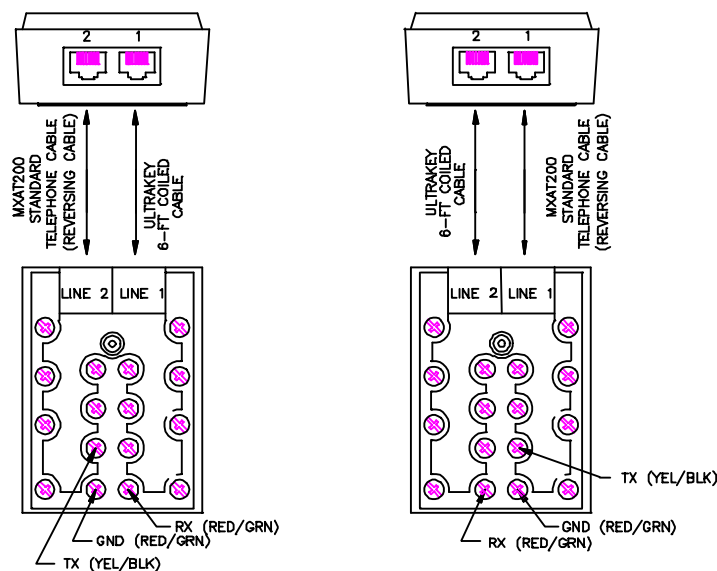


Figure 3: Interface Box for Extending Distance Between ULTRAKey and MAX-1000 MXAT200

NOTE: The interface box can also be used if the ULTRAKey is interfacing to an MAX-1000 RDATA200 controller that requires a DB-15 connector. Plug one end of the coiled cable into COM2 (RS232) on the ULTRAKey and the other end into one of the RJ-11 jacks on the interface box. A flipped cable with bare leads on one end and a DB-15 connector on the other end is required. Connect the DB-15 connector to the MAX-1000 RDATA200 controller and the bare leads to the terminals on the interface box. Refer to the following table for the terminal pin-outs of the interface box.

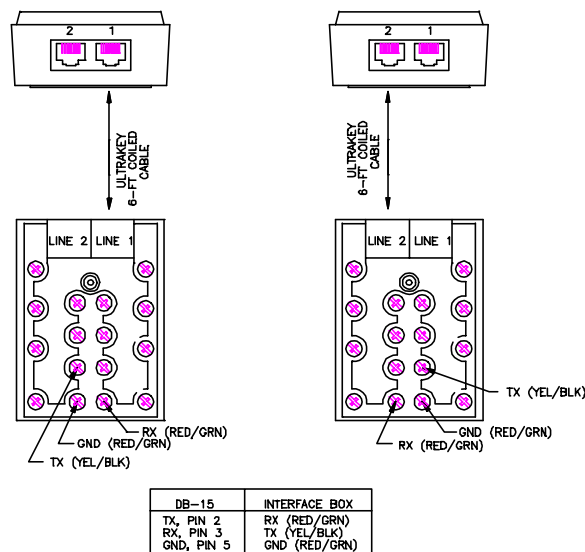


Figure 4: Interface Box for Connecting to MXAT200 with DB-15 Connector

2.1 CONNECTIONS, CONTINUED

The **COM3** (DB-9 Male) RS-232 Port connects to a PC serial port for downloading and uploading the ULTRAKey firmware and databases. The cable, part number 849518-0401, for connection between the ULTRAKey and a PC is provided. Refer to paragraphs 3.5.8 and 3.5.9.

Ethernet – This RJ45 jack is for connection to a network.

NOTES:

SECTION 3: SETUP AND OPERATION

3.1 PROGRAMMING

The person responsible for system configuration can define soft keys for the LCD screen, and can configure the actions of the hard keys. Soft keys and hard keys can be configured to do either or both of the following:

1. Send one or more keystroke commands to the MAX-1000 controller. The keystroke commands are defined in the SETMAX program.
2. Access a menu of soft keys on the LCD screen.

Refer to paragraph 3.5 (CONFIG mode) for programming procedures.

3.2 CONVERTING FROM THE HEGS5300 (KEGS5300) KEYBOARD TO THE ULTRAKEY KEYBOARD

The ULTRAKey's command interface to the MAX-1000 controller is the same as for the RD530 keyboard. The ULTRAKey sends key press and release information to the MAX-1000 controller. To use the capabilities of the ULTRAKey, the SETMAX program must be version 4.30B or higher, which recognizes up to 999 key commands. The keyboard must then be programmed to send command strings containing one or more key numbers when the soft key or hard key is pressed.

The ULTRAKey also contains jog and shuttle key definitions that need to be incorporated into the SETMAX programming if these controls are to be used.

3.3 OPERATION

When power is applied to the keyboard, it boots the firmware.

NOTE: Booting the firmware can take up to 30 seconds. After the firmware has booted, the Honeywell logo is displayed on the LCD screen for 2 seconds. If the LCD screen is not touched during this interval, it automatically enters the RUN mode. If you touch the display, it enters the Configuration mode.





3.3 OPERATION, CONTINUED

The following keystroke combinations will return you to the Honeywell logo screen. Essentially, these commands exit the Run mode and reboot the ULTRAKey firmware:

ALT (hard key) + HOME (soft key)
ALT + CLR + FUNC (all hard keys)

3.4 RUN MODE

The first default user screen (after the Honeywell logo) in RUN mode is shown below. The LCD displays ULTRAKey OFF-LINE in the status box at the top of the screen until communication is sent to the MAX1000 controller or received from the MAX1000 controller. This message is also displayed if the ULTRAKey is connected to a MX14 controller or a MXSYS04 subrack with MX128E controller card and communication is lost between the two devices. The left or right side of the status box can be pressed to cause the MAX1000 controller to send different lines of status display. The status messages are programmable in the SETMAX program.

 Home	ULTRAKey OFF-LINE!		
 Back	Group 1	Group 2	Group 3
Undo	Group 4	Group 5	Group 6
Text	Group 7	Group 8	Group 9
User macro	Group 10	Group 11	More ->
Menu	MONITOR A	MONITOR B	MONITOR C

NOTE: The soft keys (except Home and Back) can be reprogrammed in the configuration mode.



For complete operator information on how to select and control devices, refer to the MAX1000 CCTV Management System Operators Manual.

When configured hard keys or soft keys are pressed, they will do one or both of the following.

1. Send one or more key commands to the MAX-1000 MXAT200. The SETMAX program defines the key commands. There are 999 key commands available.
2. Access another menu of soft keys.

3.4 RUN MODE, CONTINUED



To view the second page of the startup screen, press the **More** → soft key

	ULTRAKey OFF-LINE!		
	Group 12	Group 13	Group 14
Undo	Group 15	Group 16	Group 17
Text	Group 18	Group 19	Group 20
User macro	Group 21	Group 22	Group 23
Menu	MONITOR A	MONITOR B	MONITOR C

The soft keys in the default menus send MAX1000 key code commands or call up another menu depending on how they are programmed. Refer to Table 1 for a listing of the key code commands.



The following default menus are programmed for the soft keys in the startup menus:

Soft Key: User macro

	ULTRAKey OFF-LINE!	
	Macro 1	Macro 6
Undo	Macro 2	Macro 7
Text	Macro 3	Macro 8
User macro	Macro 4	Macro 9
Menu	Macro 5	Macro 10

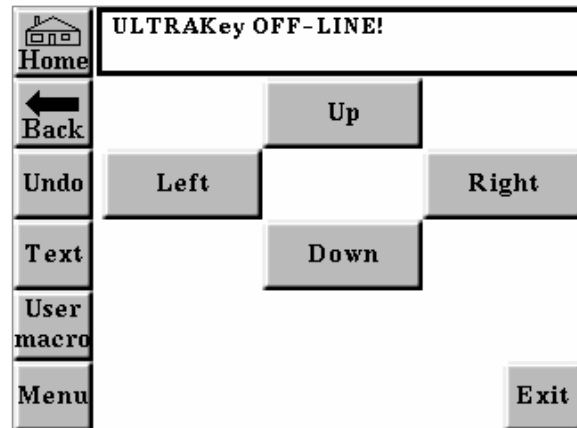
Soft Key: Menu

The Menu soft key displays four menus for setting up peripheral equipment. The menus for the MAX-1000 Setup and Dome Setup are shown below

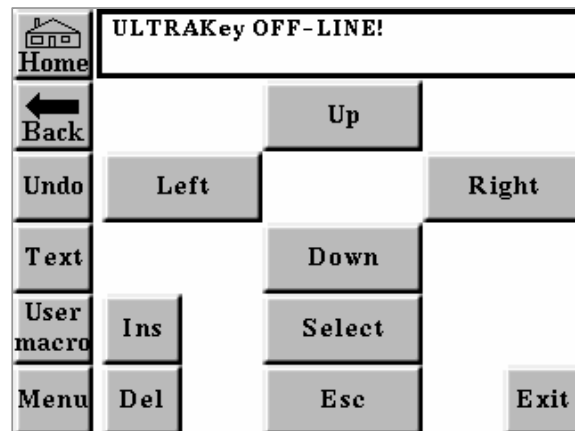
	ULTRAKey OFF-LINE!	
	MAX-1000 Setup	
Undo	Dome Setup	
Text	Mux Setup	
User macro	Quad Setup	
Menu		

3.4 RUN MODE, CONTINUED

Soft Key: MAX-1000 Setup



Soft Key: Dome Setup



Tables 1 and 2 show the default MAX-1000 key code commands.

Table 1 is a general index.

Table 2 is a listing of the defined key code commands.

Table 1: Index For MAX-1000 Key Codes	
1 - 199	MAX
200 - 299	ASSIGNABLE
300 - 999	RESERVED

3.4 RUN MODE, CONTINUED

Table 2: Default MAX-1000 Key Code Commands

Key Code	Function	Key Code	Function
1	Alarm Acknowledge	32	
2		33-36	
3	Scan	37	Group 13
4	Halt	38	Group 14
5	Pause	39	Group 15
6		40	Group 16
7	Group 1	41	Max Menu
8	Group 2	42	
9	Group 3	43	Mux
10	Group 4	44	Full
11	Alarm Clear	45	Multi screen
12		46	
13	Insert	47	VCR
14	Delete	48	Function
15	Set	49	Undo
16		50	Alternate
17	Group 5	51	Door open
18	Group 6	52	
19	Group 7	53	Print select
20	Group 8	54	Freeze
21	User Macro	55	Print color
22		56	Print B/W
23	Left Arrow	57	Mon A
24	Lock	58	Mon B
25	Right Arrow	59	Mon C
26		60	Mon D
27	Group 9	61	MONITOR SELECT
28	Group 10	62	Keypad key 1
29	Group 11	63	Keypad key 2
30	Group 12	64	Keypad key 3
31	Dome Menu	65	UP arrow

TABLE 2: Default MAX-1000 Key Code Commands, Continued

Key Code	Function	Key Code	Function
66	Keypad key 4	99	PAN RIGHT
67	Keypad key 5	100	SCROLL UP
68	Keypad key 6	101	SCROLL DOWN
69	DOWN arrow	102	
70	Keypad key 7	103	JOG 1 RIGHT
71	Keypad key 8	104	JOG 1 LEFT
72	Keypad key 9	105	SHUTTLE 1 RIGHT
73	CAMERA select	106	SHUTTLE 1 LEFT
74	View	107	JOG 2 RIGHT
75	Keypad key 0	108	JOG 2 LEFT
76	ENTER	109	SHUTTLE 2 RIGHT
77	Stop	110	SHUTTLE 2 LEFT
78	Play	111	Exit Programming
79	Record	112	Group 17
80	Rewind	113	Group 18
81	Pause	114	Group 19
82	F.Forward	115	Group 20
83	Text	116	Group 21
84	Dub	117	Group 22
85	Review	118	Group 23
86	ZOOM IN	119	
87	ZOOM OUT	120	Monitor E
88	FOCUS FAR	121	Monitor F
89	FOCUS NEAR	122	Monitor G
90	IRIS OPEN	123	Monitor H
91	IRIS CLOSE	124	
92	Night Shot	125	BLC
93	Auto Exposure	126	
94	PTZ Call	127	
95	Tour	128	
96	TILT UP	129	
97	TILT DOWN	130	Logging VCR
98	PAN LEFT	131	Standby VCR










3.4 RUN MODE, CONTINUED

TABLE 2: DEFAULT MAX-1000 KEY CODE COMMANDS, CONTINUED

Key Code	Function	Key Code	Function
132		140	Mux menu
133		141	Quad menu
134		142	
135		143	RapidDome Man Color
136	2x2	144	RapidDome Auto Focus
137	3x3	145	RapidDome Auto Flip
138	4x4	146-199	
139	PIP	200-299	ASSIGNABLE

Table 3 defines the default programming for the ULTRAKey hard keys. The keys can be reprogrammed in the configuration mode.

Table 3: ULTRAKey Hard Key Functions

HARD KEY	Key Code	Menu
CAMERA 	73	
MONITOR 	61	
MUX 	43	Mux
RECORDER 	-	Recorder
ALTERNATE ALT	50	
PTZ CALL	94	
TOUR	95	Tour
VIEW	74	
DOWN ARROW 	69	
UP ARROW 	65	
SEQ	3	Sequence
Func	-	Function
PLAY 	78	
STOP 	77	
FOCUS +	89	
IRIS +	90	
RECORD 	79	

3.4 RUN MODE, CONTINUED

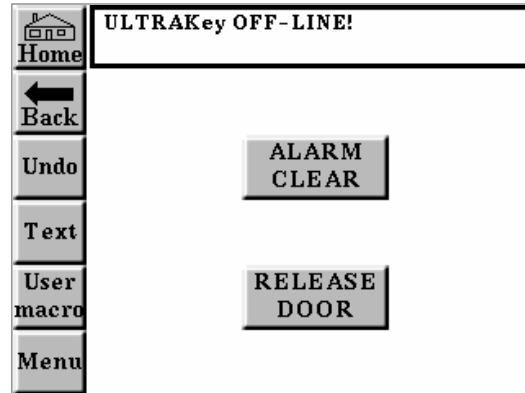
TABLE 3: ULTRAKEY HARD KEY FUNCTIONS, CONTINUED

HARD KEY	Key Code	Menu
PAUSE 	81	
REVIEW	85	Review
FOCUS -	88	
IRIS -	91	
PRINT	53	Print
DUB	84	Dub
ALARM ACK	1	Alarm
RIGHT ARROW →	25	
SET	15	
LEFT ARROW ←	23	
ENTER	76	
1	62	
2	63	
3	64	
4	66	
5	67	
6	68	
7	70	
8	71	
9	72	
0	75	
CLEAR	—	

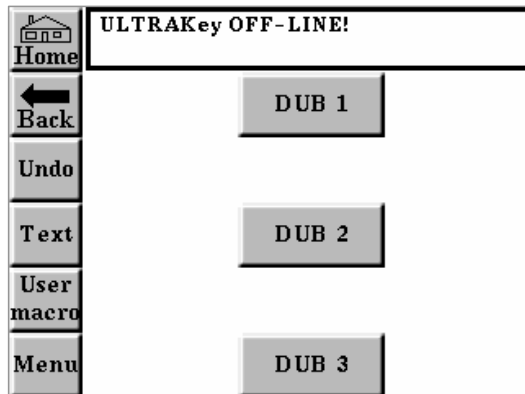
3.4 RUN MODE, CONTINUED

The following default menus are programmed for the ULTRAKey hard keys. The menus for the hard keys can be reprogrammed in the configuration mode.

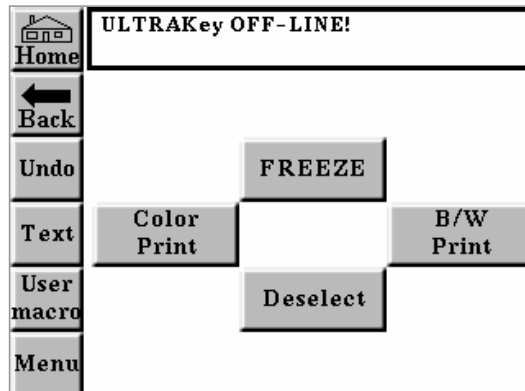
Hard Key: alarm ack



Hard key: dub





Hard key: print





3.4 RUN MODE, CONTINUED



Hard Key: review

 Home	ULTRAKey OFF-LINE!		
 Back	Pause		
Undo			
Text	Rew	Stop	FF
User macro			
Menu	Play		Record and Exit

Hard Key: func

 Home	ULTRAKey OFF-LINE!	
 Back	Night Shot / Auto Color Mode	Manual Color Mode
Undo	Auto Exposure	Automatic Focus Toggle
Text	Backlight Compensation	Automatic Flip Toggle
User macro	Lock / Unlock Dome	
Menu		

Hard Key: func

 Home	ULTRAKey OFF-LINE!		
 Back	Set Tour 1		Tour 1
Undo			
Text	Set Tour 2	END	Tour 2
User macro			
Menu	Set Tour 3		Tour 3

3.4 RUN MODE, CONTINUED

Hard Key: VCR (recorder)

Home	ULTRAKey OFF-LINE!		
Back	Set Tour 1	Tour 1	
Undo			
Text	Set Tour 2	END	Tour 2
User macro			
Menu	Set Tour 3	Tour 3	

Hard Key: MUX

Home	ULTRAKey OFF-LINE!							
Back	2 x 2	Full 1	Full 2	Full 3	Full 4			
Undo	3 x 3	Full 5	Full 6	Full 7	Full 8			
Text	4 x 4	Full 9	Full 10	Full 11	Full 12			
User macro		Full 13	Full 14	Full 15	Full 16			
Menu								

3.4.1 Selection Numbers

For all CCTV keyboard operations, an associated numeric entry is required to select and control devices in the system. For example, when selecting a camera, the camera number must be entered on the numeric keypad. If the maximum camera number used in the system, for example, is Camera 20, the CCTV system would always expect a 2-digit camera number to be entered when selecting any camera. To select camera 19, the operator must enter 19 as a 1 followed by a 9. If the operator wishes to select camera 1, the operator can enter the camera number two ways.

1 Enter

0 1 (If the required number of digits is pressed, the Enter key is not required)


3.4 RUN MODE, CONTINUED

3.4.2 Selecting a monitor


To change the current picture on a video display monitor, a monitor must first be selected.

Press the **Mon** key followed by the desired monitor number.

Example: Select monitor 3 (in a system with 10 monitors).

 3 **Enter**

OR


 0 3

NOTE: This example assumes the monitor icon button is programmed to execute key code 61 (Monitor Select).

3.4.3 Selecting a Camera

NOTE: A monitor must be selected first.

Press the **Camera** key followed by the desired camera number, then **Enter** if required.

 1 5 **Enter**

OR

 0 1 5

NOTE: This example assumes the camera icon button is programmed to execute the default key code 73 (Camera Select).

To scroll through the available cameras, press the **↑** key to select the next camera. Press the **↓** key to select the previous camera. The jog can be rotated clockwise to select the next camera. The jog can be rotated counterclockwise to select the previous camera.

3.4 RUN MODE, CONTINUED

3.4.4 Controlling a PTZ camera

To operate a PTZ camera, you must meet the following criteria:

1. A monitor must be selected;
2. The monitor must be displaying the PTZ camera;
3. The camera must have PTZ capability

PAN LEFT	Push (and hold) the joystick toward the left. Release the joystick to halt the pan function.
PAN RIGHT	Push (and hold) the joystick toward the right. Release the joystick to halt the pan function.
TILT UP	Push (and hold) the joystick up away from yourself. Release the joystick to halt the tilt up function.
TILT DOWN	Push (and hold) the joystick down toward yourself. Release the joystick to halt the tilt down function.

NOTE: The tilt up and down functions may be reversed, depending on your system's configuration.

If the PTZ camera is equipped with manual iris and/or a zoom lens, the following PTZ functions apply.

IRIS +	Press (and hold) the iris + button to open the lens iris until the desired iris setting is achieved, then release the button.
IRIS -	Press (and hold) the iris - button to close the lens iris until the desired iris setting is achieved, then release the button.
ZOOM IN	Press (and hold) the zoom in key until the desired setting is achieved, then release the button.
ZOOM OUT	Press (and hold) the zoom out key until the desired setting is achieved, then release the button.
FOCUS -	Press (and hold) the focus - key to "far" focus the lens. Releasing the key halts the focus function.
FOCUS +	Press (and hold) the focus + key to "near" focus the lens. Releasing the key halts the focus function.

3.4 RUN MODE, CONTINUED

3.4.5 Programming a PreShot (View)

NOTE: Access to programming PTZ preset positions may be denied to some operators.

To program a camera VIEW (PTZ position), you must meet the following criteria:

1. A monitor must currently be selected;
2. The monitor must be displaying the desired camera;
3. The desired camera must be a PTZ camera with VIEW (preset) capability

Using the camera PTZ functions, move to the desired position of the new view.
Perform the following procedure to save the desired position.

Press **VIEW** then **SET**.
Press the view number (00-99).

NOTE: Usually only the first ten (00-09) views are available to the keyboard operator.

3.4.6 Sending a Camera to a View (PreShot)

To send a camera to a view, the following criteria must be met:

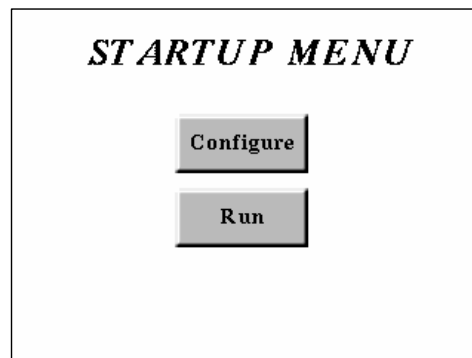
1. A monitor must be selected;
2. The monitor must be displaying the desired camera;
3. The desired camera must have PTZ with View capability.

Press the **VIEW** key then the view number (00-99).

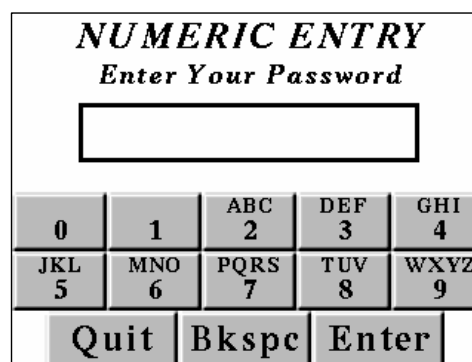
3.5 CONFIG MODE

To access the CONFIG mode from the RUN mode, press **alt+Home** to reboot the controller. Touch the Honeywell logo to enter the Configuration mode.

Press the **Configure** soft key to access the configuration menu.

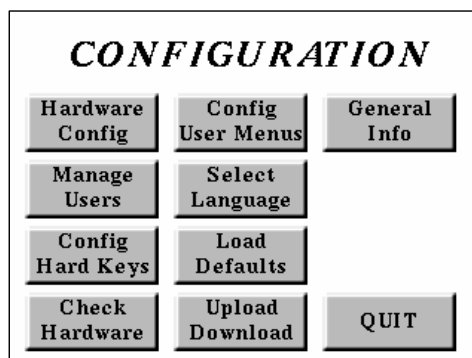


To enter the configuration mode, the user must first enter a **valid password** and press **Enter**. The factory set password is **1111**.



After a valid password is entered, the Configuration menu is displayed.

Press a soft key to access the menus for each configuration function or press **QUIT** to exit the Configuration menu.



3.5 CONFIG MODE, CONTINUED

3.5.1 Hardware Configuration

Press the **Hardware Config** soft key to access the hardware configuration options.

+Contrast = 29 - press this soft key to increase the contrast of the LCD display.

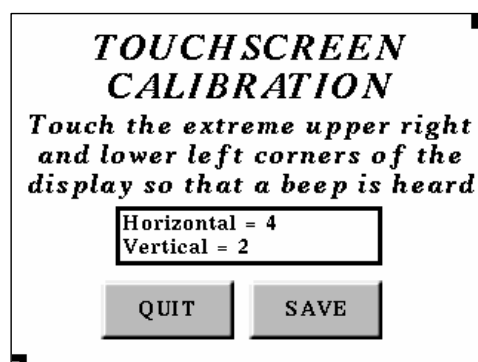
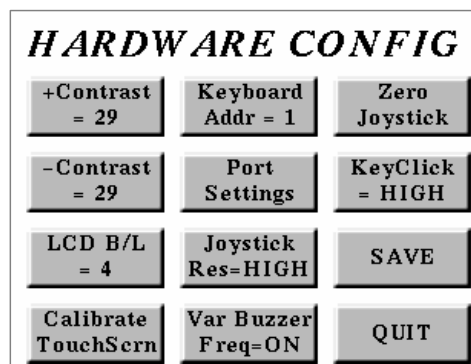
- Contrast = 29 - press this soft key to decrease the contrast of the LCD display.

After setting the contrast to the desired level, press the **SAVE** soft key.

LCD B/L = 4 - press this soft key to set the LCD backlight intensity. There are four settings (1, 2, 3, & 4) with 1 being the lowest intensity and 4 being the highest intensity. Note: this adjustment only applies to board 470502-1030, Rev. A or later.

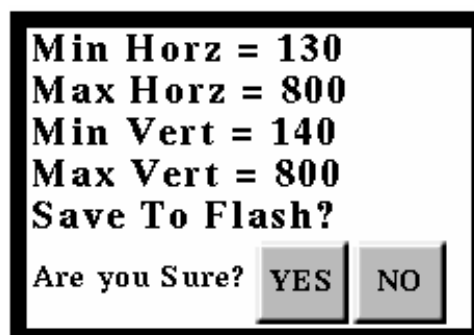
Calibrate TouchScrn - press this soft key to calibrate the touchscreen.

Touch the screen using a small diameter, soft, blunt instrument (such as a pencil eraser) as stated in the message to calibrate the screen.



Press the **QUIT** soft key to exit the calibration menu without changing the settings or press the **SAVE** soft key to save the settings and exit the calibration menu. If you select SAVE, a message (an example is shown to the right) is displayed showing the new settings.

Press **YES** to change the settings.
Press **NO** to exit the calibration menu.



3.5 CONFIG MODE, CONTINUED

Keyboard Addr = 1 – press this soft key to change the address of the ULTRAKey. Each keyboard in the system must have a unique address between 1 and 99 corresponding to the keyboard address as defined in the SETMAX program.

Enter the desired number using the numeric soft keys or the numeric keypad, then press the **Enter** soft key. Use the **Bkspc** soft key to delete a number(s) entered in error. Press the **Quit** soft key to exit the keyboard address menu without changing the address.

NUMERIC ENTRY
Enter KBD Address (1-99)

0	1	ABC 2	DEF 3	GHI 4
JKL 5	MNO 6	PQRS 7	TUV 8	WXYZ 9
Quit		Bkspc	Enter	

After entering a new keyboard address, press the **SAVE** soft key in the Hardware Config menu. A message, "Save to Flash?" is displayed. Press **YES** to save the new keyboard address; press **NO** to exit without saving the new address to flash memory.

Port Settings – press this soft key to define the communication settings for COM1, COM2, COM3, or Ethernet.

Press the desired soft key (COM1, COM2, COM3, or Ethernet) to define the communication settings.

NOTE: The communication settings must be the same as the equipment connected to the port.

PORT SETUP

COM 1
RS-485

COM 2
RS-485/RS-232

COM 3
RS-232 (DB9)

Ethernet

QUIT

Example: Press COM 1

Pressing the soft key toggles between the available options. Refer to Tables 1 and 2 for the available and default port settings

COM 1 SETTINGS

Type = RD-530	Baud Rate = 9600	Data Bits = 8
Parity = Even	Stop Bits = 1	
SAVE		
QUIT		

3.5 CONFIG MODE, CONTINUED

Table 4. COM Port Available Settings

Soft Key	COM 1 & COM 2 Available Settings	COM 3 Available Settings
Type	RD530 None	Debug File Trans None
Parity	Even Odd None	Even Odd None
Baud Rate	9600 19200 38400	9600 19200 38400
Data Bits	5 6 7 8	8
Stop Bits	2 1	1

The settings required for the MAX-1000 (ULTRAKey) are:
even parity, 19,200 baud rate, 7 data bits, and 1 stop bit.

Table 5. COM Port Default Settings

Soft Key	COM1	COM2	COM3 (DB-9 RS-232 Port)
Type	None	RD530	Debug
Parity	NA	Even	None
Baud Rate	NA	19.2K	9600
Data Bits	NA	7	8
Stop Bits	NA	1	1

*NA = Not Applicable

3.5 CONFIG MODE, CONTINUED

When you press the **Ethernet** soft key, the following screen is displayed:

<i>ETHERNET SETUP</i>	
IP Address	128.129.39.75
Subnet Mask	255.255.255.0
Default Gateway	128.129.39.1
Sys. Cntl. IP Address	128.129.39.77
Save	
QUIT	



CAUTION: Contact Your Network Administrator Before Changing Network ID Settings. Incompatible IP Settings Can Be Detrimental To The Operation Of Your Network.

To change the **IP Address**, **Subnet Mask**, **Default Gateway**, and **Sys. Cntl. (System Controller) IP Address** to match your existing network settings, press the corresponding soft key for each setting.

NOTE: The Default Gateway and Sys. Cntl. IP Address fields can be disabled. To disable one of these fields, enter 000.000.000.000.

The following is an example of what is displayed on the screen when an Ethernet Setup soft key is pressed.

Enter the 12-digit address using the soft key numeric keypad, the numeric keypad on the ULTRAKey, or a QWERTY keyboard connected to the ULTRAKey.

NOTE: Leading zeros must be entered for numbers (within addresses) with less than three (3) digits. For example: 128.129.39.75 must be entered as 128129039075

<i>NUMERIC ENTRY</i>				
<i>Enter IP Address</i>				
128.129.039.075				
0	1	ABC 2	DEF 3	GHI 4
JKL 5	MNO 6	PQRS 7	TUV 8	WXYZ 9
Quit		Bkspc	Enter	

Press the **SAVE** soft key to save the settings you entered or press the **QUIT** soft key to exit the port settings menu without saving the settings.

If you pressed **SAVE**, the following message is displayed.

Save to Flash?	
Note: This will save all user settings	
Are you Sure?	
YES	NO

3.5 CONFIG MODE, CONTINUED

Press the **YES** soft key to save the settings or press **NO** to exit the port settings menu. If you press YES, the message DATA SAVED is displayed.

A rectangular box with a thick black border. Inside the box, the text "Data Saved" is centered in a bold, black, sans-serif font.

Data Saved

Joystick Res=High – press this soft key to change the joystick (pan and tilt functions) resolution to high or low. High = 26 increments, Low = 5 increments. The soft key toggles between the options. After changing the joystick resolution, press the **SAVE** soft key in the Hardware Config menu.

Var Buzzer Freq = ON – This soft key selection is available in firmware version 3.01 and later. The default is ON to support the buzzer driver on circuit board 470502-1030, Rev. A. If firmware version 3.01 or later is used with an earlier revision circuit board, the buzzer driver for the older circuit may be selected by changing the Var Buzzer Freq to OFF. Pressing this soft key toggles the buzzer frequency from variable (On) and fixed (Off).

Zero Joystick – press this soft key to zero the joystick. This function electronically centers the pan, tilt, and zoom positions of the joystick. This function should be executed with the joystick in its neutral position. This function is executed automatically on power-up.

KeyClick = HIGH – press this soft key to change the sound the ULTRAKey makes when you press any soft key, programmed hard key, move the joystick or jog/shuttles. The available options are low, high, or off. If you change the KeyClick setting, press the **SAVE** soft key in the Hardware Config Menu. Note: The Key Click setting in SETMAX must be enabled for the soft and hard key clicks to be operational, and the Joystick click setting in SETMAX must be enabled for the joystick and jog/shuttle audible feedback to be operational.

SAVE – Press this soft key to save all hardware configuration settings. The message, "Save to Flash?" is displayed. Press **YES** to save the settings to flash memory; press **NO** to exit without saving settings. If you pressed yes, the message, "Data Saved", is displayed.

QUIT – Press this soft key to exit the hardware configuration settings.



CAUTION: Save any changes before exiting or settings will be lost.

3.5 CONFIG MODE, CONTINUED

3.5.2 Manage Users

Press the **Manage Users** soft key to add users, delete users, or change user privileges or password.

The programming soft keys are the six buttons on the left side.

The programmed users are displayed in the two right columns.

Add User	ULTK Admin	
Delete User	USER Admin	
Change Privilege		
Change Password		
Save		
Quit		

NOTE: The ULTK Admin user is for factory use and cannot be deleted. The USER Admin is the factory defined user with password 1111. This user can be deleted, **but** you must create another User ID with Admin privileges, log in as the new user, then delete USER Admin. If you are logged in as password 1111 (USER Admin), you cannot delete yourself

Add User – press this soft key to add a new user

Quit	Enter new User ID							Bksp
Clear								Enter
A	B	C	D	E	F	G	H	
I	J	K	L	M	N	O	P	
Q	R	S	T	U	V	W	X	
Y	Z		!	#	\$	↑	↓	

1. Using the touch screen or an AT-keyboard, press the **characters (up to 4) to enter the User ID**. Use the up and down arrows on the touch screen to access more keys (lower case letters, symbols, etc.). To enter numeric values, use the numeric keypad. To delete characters from the end of the User ID, press the **Bksp** soft key; to delete all characters, press the **Clear** soft key.
2. Press the **Enter** soft key to enter the new User ID. The ULTRAKey requires you to provide a system privilege level - User, Lead, or Admin.

Select Privilege for Operator 'NEW'	
USER	
LEAD	
ADMIN	

3.5 CONFIG MODE, CONTINUED

1. Enter the Users privilege level by pressing the appropriate soft key.

User allows the operator full control and programming capabilities less Manage Users capability.

Lead allows the operator full control and programming capabilities less Manage Users capability.

Admin allows the operator full control and programming capabilities of the ULTRAKey.

2. Enter the User's password. The password must be a **minimum of 4 numbers to up to 10 numbers maximum**. Use the soft keys on the LCD display, the numeric keypad, or the AT-keyboard to enter the password.

NUMERIC ENTRY
Enter New Password

0	1	ABC 2	DEF 3	GHI 4
JKL 5	MNO 6	PQRS 7	TUV 8	WXYZ 9
Quit		Bkspc	Enter	

3. Press the **Enter** soft key

4. You must confirm the password by entering the **same password again**.

Press the **Enter** soft key.

NUMERIC ENTRY
Confirm New Password

0	1	ABC 2	DEF 3	GHI 4
JKL 5	MNO 6	PQRS 7	TUV 8	WXYZ 9
Quit		Bkspc	Enter	

Delete User – Press the User you want to delete by pressing the User soft key (the User key should be outlined), then press the Delete User soft key. A message to confirm deleting the selected user is displayed. Press YES to delete the user; press NO to cancel the operation. Note: you cannot delete yourself.

Change Privilege – Press the User's soft key (the User key should be outlined), then press the Change Privilege soft key. A message to confirm changing the selected user's privilege is displayed. Press YES to change the privilege; press NO to cancel the operation. If you press YES, the privilege screen is displayed. Select the appropriate privilege by pressing the soft key and then press Enter.

3.5 CONFIG MODE, CONTINUED

Change Password – Press the User's soft key (the User key should be outlined), then press the Change Password soft key. The message, "Are you sure you want to change the password for User ID?", is displayed. Answer Yes or No. If you answer No, you exit the change password menu. If you answer Yes, the LCD prompts you to enter the new password. Enter the new password using the numeric soft keys or the numeric keypad, then press Enter. The LCD prompts you to confirm the new password, then press **Enter**.

Save – Press this soft key to save all user entries (new and changed).

Quit – Press this soft key to exit the Manage Users menu.



CAUTION: Save new entries and user changes prior to quitting.

3.5.3 Config Hard Keys

Press the **Config Hard Keys** soft key (from the CONFIGURATION menu) to program the response for the function (hard) keys.

1. Press the **Edit Properties** soft key.
2. Press the hard key you want to configure or change the current configuration

For example, if you pressed the VCR hard key, the following menu is displayed.

You can program the hard key to send a keystroke command to the MXAT200 controller or call up another menu or both. The keystroke command must be programmed in the MXAT200 using SETMAX.

3. To program one or more (up to 10) keystroke commands, press the **MAX Key** soft key. The first key command, step #1, is displayed.

NOTE: The same procedures used to program a hard key are used to edit the configuration of a hard key.

HARD KEY CONFIG

Edit
Properties

Execute
Actions

Quit

Step	Parent Menu: StartupMenu	
#: 1	Action Key: Lobby (20)	
Key#:	Key Name:	
18	PER Doors	↑ Pg Up
19	MUX View	
20	Lobby	↓ Pg Dn
21	Left Arrow	
22	Right Arrow	
Goto Key #	Prev Step	Next Step
	Edit Name	New Key
	Del Key	
Select Action	Ins Actn	Del Actn
	Cancel	OK

3.5 CONFIG MODE, CONTINUED

- a. Select a keystroke command for step #1.
 - 1) If there are keystroke commands listed, you can select from the listing by **highlighting the Key# and Key Name**. To view more of the listing, press the **soft up and down arrow keys** or the soft **Pg Up** and **Pg Dn** keys.
 - 2) To go to a specific key # in the list, press the **Goto Key#** soft key. Enter the **key#** and press **Enter**. If the key# does not exist in the listing, the highlight goes to the closest number in the listing.
 - 3) To add a keystroke command to the list, refer to paragraph c below.

When the desired command is highlighted, press the **Select Action** soft key, then the **OK** soft key. The message "Key Action Changed" is displayed on the LCD display.

The display automatically goes to step #2.

- b. Program a keystroke command for step #2 or press **OK** to end programming MAX keystroke commands.

If two or more steps are programmed, the user can view the previous step in the sequence by pressing the **Prev Step** soft key or the next step in the sequence by pressing the **Next Step** soft key.

If two or more steps are programmed, the user can view the previous step in the sequence by pressing the **Prev Step** soft key or the next step in the sequence by pressing the **Next Step** soft key.

To delete a step in the command sequence, display the step to be deleted, then press the **Del Actn** soft key. A message confirming deleting the action is displayed. Press **YES** to delete the action; Press **NO** to cancel the operation. If you press Yes, the step is deleted and all steps after the deleted step are moved up one step. For example, if you have five steps programmed and you delete step 3. Step 4 moves to step 3 and step 5 moves to step 4. Step 5 is no longer programmed.

To insert a step in the command sequence, highlight the desired keystroke command, then press the **Ins Actn** soft key. A message, "Key Action Inserted" is displayed. The action is inserted before the currently displayed step. For example, to insert a step between steps 2 and 3, display step #3 by pressing the Prev Step or Next Step soft keys. If you press the Ins Actn soft key while viewing step #3, the key# that is highlighted is inserted as step #3, and step 3 becomes step 4, step 4 becomes step 5, etc.

3.5 CONFIG MODE, CONTINUED

- c. To add a keystroke command to the listing, press the **New Key** soft key.

- 1) Enter the keystroke command number (**1-999**).

NOTE: The keystroke command numbers must correspond to the commands programmed in the MXAT200 controller using the SETMAX program.

- d. Enter a **name** for the command. Using the soft up and down arrow keys or the jog control to scroll through the available characters on the keyboard. You can also use the numeric keypad to enter numbers.

1. Press **Enter**.

2. Perform step a above to select the new command for the hard key.

- e. To delete a keystroke command from the listing, **highlight the key# and name**, then press the **Del Key** soft key. Note: if the key is being used, an error message is displayed, "Unable to delete key code. Key being used." Press **OK** to exit the error message. If the key code has been selected or created during this programming session, you must save a new selection for the hard key before you can delete the key action. Exit the programming menus, then re-enter the hard key programming screen and delete the key action.

- f. To change the name of a keystroke command, press the **Edit Name** soft key, enter a new name, and press **OK**. The new name appears in the listing.

- g. Press the **OK** soft key to save programming or press the **Cancel** soft key to exit menu without saving. **Note: Changes made with the Edit Name, New Key, and Del Key soft keys do not revert back if cancel is pressed.**

4. To program a Menu Action, press the **Menu** soft key

Editing Hard Key: VCR			
Action Menu: (NONE)			
Menu Name:		↑	Pg Up
StartupMenu			
Lobby		↓	Pg Dn
First Floor			
Second Floor			
Third Floor			
Select Action	Edit Name	New Menu	Del Menu
Delete Action	Cancel		OK

3.5 CONFIG MODE, CONTINUED

- a. If there are Menus listed, you can select from the listing by **highlighting the Menu Name**. To view more of the listing, press the **soft up and down arrow keys** or the soft **Pg Up** and **Pg Dn** keys. When the menu is highlighted, press the **Select Action** soft key, then the **OK** soft key.

- b. To add a new menu to the listing, press the **New Menu** soft key

Quit	New Menu's Name:							Bksp
Clear								Enter
A	B	C	D	E	F	G	H	
I	J	K	L	M	N	O	P	
Q	R	S	T	U	V	W	X	
Y	Z		!	#	\$	↑	↓	

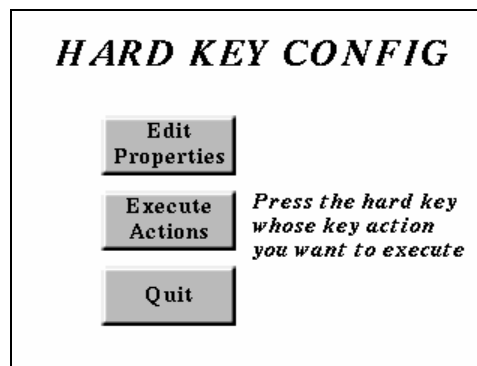
- 1) Enter the **name** of the new menu. Use the soft up and down arrow keys to view more characters. You can also use the numeric keypad for entering numbers or the AT-keyboard for entering alphanumeric characters. Use the Bksp and Clear key for keystroke errors.
 - 2) Press the **Enter** soft key. The new Menu name appears in the listing. The new menu automatically gets assign to the hard key you are editing.
- c. To delete a menu from the listing, highlight the menu name, then press the Del Menu soft key. Note: if the menu is being used, an error message is displayed, "Unable to delete menu. Menu being used." Press OK to exit the error message. If the menu has been selected or created during this programming session, you must save a new selection for the hard key before you can delete the menu. Exit the programming menus, then re-enter the menu programming screen and delete the menu.
- d. To edit a menu's name, press the **Edit Name** soft key. Edit the name by pressing the Bksp key to clear letters from the end of the name, press the clear key to clear all letters, then add letters using the soft characters on the display or use the AT-keyboard. Note: you cannot edit the name of the Startup Menu.
- e. To delete a menu action from a hard key, press the **Delete Action** soft key.
- f. Press the **OK** soft key to save programming. Press the **Cancel** soft key to exit programming without saving.

NOTE: Changes made with the Edit Name, New Menu, or Del Menu soft keys do not revert back if Cancel is pressed.

3.5 CONFIG MODE, CONTINUED

5. To edit a menu, press the **Edit Menu** soft key. Refer to paragraph 3.5.5 for programming a menu.
6. Press the **OK** soft key to save programming.
Press the **Cancel** soft key to exit programming without saving.
7. To verify the actions of the hard key, press the **Execute Actions** soft key.
 - a. Press the **hard key** on the controller. Verify the MAX key command actions you programmed occur.

NOTE: The action (key command) must be programmed in the MXAT200 controller.



8. Continue programming hard keys or press the **Quit** soft key to exit the Hard Key Configuration menu.

3.5.4 Check Hardware

The Check Hardware soft key is a diagnostic tool to verify operation of the hard keys, the jogs and shuttles, and the joystick



Press the Check Hardware soft key. A screen is displayed with a status box for each control function or hard key on the controller. Press each hard key and operate the jogs, shuttles, and joystick. Verify the box for each function fills with bars (joystick and jog/shuttles) or a block appears (hard key) as you perform the function.

To **exit** the diagnostic screen, press the **touch screen** anywhere.

3.5 CONFIG MODE, CONTINUED

3.5.5 Config User Menus











Press the Config User Menus from the Configuration screen to add, delete, or edit soft keys. The following is an example of a Startup Menu. Your startup menu may vary, i.e. you may have a custom screen or no soft keys defined other than the Home, Back, and Status Box.

 Home	ULTRAKey OFF-LINE!		
 Back	Group 1	Group 2	Group 3
Undo	Group 4	Group 5	Group 6
Text	Group 7	Group 8	Group 9
User macro	Group 10	Group 11	More ->
Menu	MONITOR A	MONITOR B	MONITOR C

When configuring the soft keys and menus, you can edit an existing key by holding “alt”, then pressing the soft key you wish to edit. You can send the key command (to the MAX-1000 controller) associated with a soft key by holding the “func” key and then pressing the soft key.

The first row (Home and Status Box) and the first key (Back) in the second row are not programmable. All other areas of the screen are programmable.

1. To edit an existing soft key, press the **alt key and the soft key**.
To create a new soft key, touch a **blank space** on the LCD display.
For example, pressing **alt+ the Group 1** soft key in the above screen, opens the following configuration menu.

	Menu: StartupMenu Button Row: 2 Column: 2		
Button Size:			
Edit Text:			
Button Action:			
			

3.5 CONFIG MODE, CONTINUED

In the status box, the Menu name where the soft key resides is displayed and the location of the soft key within the menu is displayed

- a. The button size can be one, two, or three button widths (providing there is blank space next to the soft key on the display). The screen only displays the possible size(s) for the space. To select a button size, press the **desired button size** on the screen.
- b. The text displayed on the menu for the soft key is programmable. There can be two lines of text (Top Text and/or Bottom Text). The text is centered on the button horizontally and vertically.

NOTE: If the text is wider than the key, the text will be truncated. If there is only one line of text, it is centered vertically on the key.

- 1) To enter the top line of text, press the **Top Text** soft key.
 - 2) Enter the desired **name** for the soft key by pressing the character soft keys on the display. Use the soft up and down arrow keys or the jogs to scroll through the keyboard for more characters. An AT-keyboard can also be used or numbers can also be entered using the numeric keypad on the ULTRAKey.
 - 3) Press the soft **Enter** key to save the text
 - 4) To enter the bottom line of text, press the **Bottom Text** soft key.
 - 5) Perform steps 2 and 3 for the Bottom Text.
- c. The button action can be one or more MAX key commands (up to 10) and/or a Menu command.

- 1) To program one or more (up to 10) keystroke commands, press the **MAX Key** soft key. The first key command, step #1, is displayed.

NOTE: The same procedures are used to program a hard key or to edit the configuration of a hard key.

Step #: 1	Parent Menu: StartupMenu				
Action Key: Lobby (20)					
Key#: 18	Key Name: PER Doors			↑	Pg Up
19	MUX View				
20	Lobby			↓	Pg Dn
21	Left Arrow				
22	Right Arrow				
Goto Key #	Prev Step	Next Step	Edit Name	New Key	Del Key
Select Action	Ins Actn	Del Actn	Cancel		OK

3.5 CONFIG MODE, CONTINUED

- a) Select a keystroke command for step #1.
 - i) If there are keystroke commands listed, you can select from the listing by **highlighting the Key# and Key Name**. To view more of the listing, press the **soft up and down arrow keys** or the soft **Pg Up** and **Pg Dn** keys.
 - ii) To go to a specific key # in the list, press the **Goto Key#** soft key. Enter the **key#** and press **Enter**. If the key# does not exist in the listing, the highlight goes to the closest number in the listing.
 - iii) To add a keystroke command to the list, refer to paragraph c below.

When the desired command is highlighted, press the **Select Action** soft key, then the **OK** soft key. The message "Key Action Changed" is displayed on the LCD display.

The display automatically goes to step #2.

- b) Program a keystroke command for step #2 or press **OK** to end programming MAX keystroke commands. If two or more steps are programmed, the user can view the previous step in the sequence by pressing the **Prev Step** soft key or the next step in the sequence by pressing the **Next Step** soft key.

To **delete** a step in the command sequence, display the step to be deleted, then press the **Del Actn** soft key. A message confirming deleting the action is displayed. Press **YES** to delete the action; Press **NO** to cancel the operation. If you press **YES**, the step is deleted and all steps after the deleted step are moved up one step. For example, if you have five steps programmed and you delete step 3. Step 4 moves to step 3 and step 5 moves to step 4. Step 5 is no longer programmed.

To insert a step in the command sequence, highlight the desired keystroke command, then press the **Ins Actn** soft key. A message, "**Key Action Inserted**" is displayed. The action is inserted before the currently displayed step. For example, to insert a step between steps 2 and 3, display step #3 by pressing the **Prev Step** or **Next Step** soft keys. If you press the **Ins Actn** soft key while viewing step #3, the key# that is highlighted is inserted as step #3, and step 3 becomes step 4, step 4 becomes step 5, etc.

3.5 CONFIG MODE, CONTINUED

- c). To add a keystroke command to the listing, press the **New Key** soft key.
 - i) Enter the keystroke command number (1-999). Note: The keystroke command numbers must correspond to the commands programmed in the MXAT200 controller using the SETMAX program.
 - ii) Enter a **name** for the command. Using the soft up and down arrow keys or the jog control to scroll through the available characters on the keyboard. You can also use the numeric keypad to enter numbers.
 - iii) Press **Enter**.
 - iv) Perform step a) above to select the new command for the hard key.
 - d). To delete a keystroke command from the listing, **highlight the key# and name**, then press the **Del Key** soft key. Note: if the key is being used, an error message is displayed, "Unable to delete key code. Key being used." Press **OK** to exit the error message. If the key code has been selected or created during this programming session, you must save a new selection for the hard key before you can delete the key action. Exit the programming menus, then re-enter the hard key programming screen and delete the key action.
 - e). To change the name of a keystroke command, press the **Edit Name** soft key, enter a new name, and press **OK**. The new name appears in the listing.
 - f). Press the **OK** soft key to save programming or press the **Cancel** soft key to exit menu without saving. **Note: Changes made with the Edit Name, New Key, and Del Key soft keys do not revert back if cancel is pressed.**
2. To program a Menu Action, press the **Menu** soft key.
A menu is displayed for programming the Menu Action
- a). If there are Menus listed, you can select from the listing by **highlighting the Menu Name**. To view more of the listing, press the soft up and down arrow keys or the soft Pg Up and Pg Dn keys. When the menu is highlighted, press the **Select Action** soft key, then the **OK** soft key.

3.5 CONFIG MODE, CONTINUED


- b. To add a new menu to the listing, press the New Menu soft key.
 - i) Enter the name of the new menu. Use the soft up and down arrow keys or the jogs to view more characters. You can also use an AT-keyboard for entering characters or the numeric keypad on the ULTRAKey for entering numbers. Use the Bksp and Clear key for keystroke errors.
 - ii) Press the Enter soft key. A message, "Menu Selection Changed" is displayed. The new Menu name appears in the listing.
 - c. To delete a menu from the listing, highlight the menu and press the **Del Menu** soft key. There are two menus, the *StartupMenu* and the *AlphanumericEntry menu* that cannot be deleted. Also, if the menu is assigned to a soft key, the following message is displayed. "ERROR: Unable to delete menu. Menu being used." Press **OK**.
 - d. To edit a menu's name, press the **Edit Name** soft key, enter the **new name** and press **OK**. Use the Bksp to delete letters from the end of the name or use the Clear key to delete all letters. Note: The *Alphanumeric Entry* and *StartupMenu* menus cannot be renamed or edited. The new name appears in the listing.
 - e. To delete a menu action from a soft key, press the Delete Action soft key. A message confirming the deletion is displayed. Press YES to delete the menu action; press NO to cancel the deletion.
 - f. Press the OK soft key to save programming or press the Cancel soft key to exit menu without saving.
- NOTE: Changes made with the Edit Name, New Menu, and Del Menu soft keys do not revert back if cancel is pressed.
- 3. Press the **OK** soft key to save programming.
Press the **Cancel** soft key to exit programming without saving.
 - d. To remove a button from a menu, press the **Delete Button** soft key.
 - e. If you want to copy this button and insert it into another menu, press the **Copy Button** soft key. This copies the button to a holding file (much like a Windows clipboard). You can then paste the button into another menu.
 - f. To save the programming for the soft key, press the **OK** soft key.
- 2. Press **alt+home** soft key to return to the previous menu.

3.5 CONFIG MODE, CONTINUED

3.5.6 Select Language

The **Select Language** soft key is for future use. If you press the **Select Language** soft key, the following message is displayed.

The message disappears after 2 seconds



**No Language
Options Are
Available**

3.5.7 Load Defaults

To load the factory set defaults, press the **Load Defaults** soft key in the CONFIGURATION menu. This returns the ULTRAKey to the default menu and hard key configuration embedded in the firmware. This is normally a nominal configuration with default hard key definitions and no defined menus. However, for custom versions of the ULTRAKey, the default configuration may be a fully functional configuration that is hard-coded in the ULTRAKey firmware.

When you press the **Load Defaults** soft key, the following message is displayed.

Press **Done** after reading the screen.

You will be asked if you want to load default menu and hard key configuration.

'LOAD DEFAULTS' HELP

This option allows the user to reload the system default menu and hard key configurations. If you select this option, then modify and save the data, you will permanently lose all prior menu and hard key customization.

Done

Press **NO** to exit restoring defaults.

Press **YES** to restore the default configuration. If you select **YES**, the system asks if you want to save the defaults to flash memory.

When asked to save the defaults to flash memory:

**Load default
menu and hard key
configuration?**

Are you Sure? YES NO

Press **NO** to only restore the defaults until you power down the ULTRAKey. This allows you to work with the default settings, but not permanently change the firmware back to the default settings.

Select **YES** to restore the defaults to flash memory.



CAUTION: This action deletes all custom programming and returns the firmware to all default settings as soon as 'Yes' is pressed.

3.5 CONFIG MODE, CONTINUED

3.5.8 Download Firmware

The firmware can be downloaded from a PC to the ULTRAKey. The PC must be connected to the ULTRAKey on COM 3 (RS-232 DB-9). The PC must have the file transfer software loaded. The communication settings of the port on the PC must be the same as the communication settings of COM 3 on the ULTRAKey. The recommended transfer baud rate is 38,400.



CAUTION: Prior to downloading new firmware, upload your data base files to a PC. Data base files may be corrupted when firmware is downloaded. Refer to paragraph 3.5.9.

1. Set the ULTRAKey port settings for COM3 to File Trans and set the baud rate to the desired setting. Refer to paragraphs 3.5, 3.5.1, and Table 2. Power down the ULTRAKey and power it back up.

NOTE: If COM3 is already set to File Trans, you do not need to power the unit down.

2. Run the file transfer software on your PC. The software is stored on the 3-1/2" floppy disk provided in the zip lock bag with the manual. The file name for the transfer software is **filexfer.exe**. There are two files (rom.vxWorks.bin and rom.appl.bin) on the floppy for the firmware. You can copy the files from the floppy to your hard drive on your computer or you can run the software and download the files from the floppy disk.

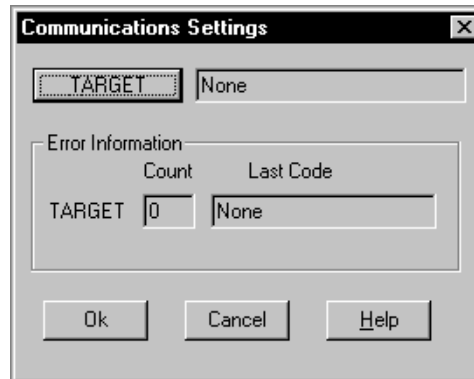
NOTE: If you copy the files to your hard drive and run the transfer software from your hard drive, the filexfer.exe can be copied to a location of your choice. The filexfer.ini file must be copied to your Windows directory (Windows 95/98) or Winnt directory (WindowsNT).

3. Run the file transfer software by **double left-clicking on filexfer.exe**. The following window opens:

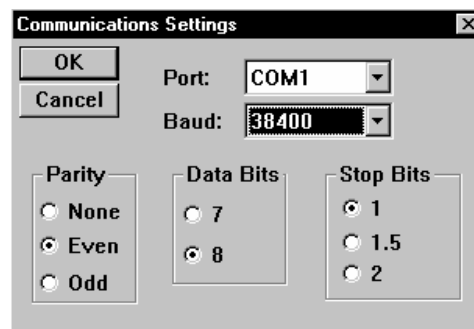


3.5 CONFIG MODE, CONTINUED

4. Left click on **Settings** or press Alt+S on the PC keyboard. Left click on **Port** or press P on the PC keyboard.



5. Left click on **TARGET** to define the communication settings for the PC serial port connected to the ULTRAKey.

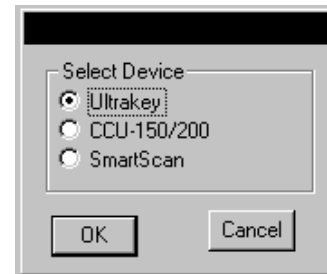


- a. Set the **Port:** field to the port on the PC connected to the ULTRAKey. Click on the down arrow beside the Port: field to display the available settings.
- b. Set the **Baud:** field to 38400 (recommended). This can be set to any of the available settings as long as COM3 on the ULTRAKey is set at the same rate.
- c. Set the **Parity, Data Bits, and Stop Bits.** Again, these settings must match the settings of COM3 on the ULTRAKey. The data bits and stop bits must be set at 8 and 1, respectively.
- d. Left click on **OK** to save settings.

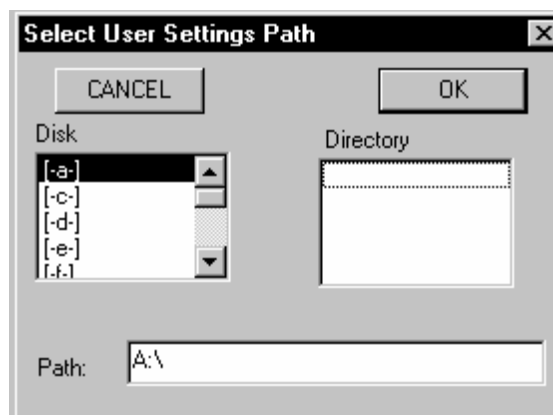
3.5 CONFIG MODE, CONTINUED

6. Left click on **Settings** or press Alt+S on the PC keyboard.
Left click on **Select Device**.

- a. Select **ULTRAKey** by pointing to the radio button beside ULTRAKey. When selected, it should appear as shown above.
- b. Left click on **OK**.



7. Left click on **Settings** or press Alt+S on the PC keyboard.
Left click on **Select Path**.



- a. Select the **Disk** where the firmware files are located, for example a: if you are using the floppy or c: if you copied the files to your hard drive. The disk must be highlighted in the window.
- b. Select the **Directory** (if applicable) where the firmware files are located on the disk. Note: If you download from the floppy, the files are stored in the root directory so you will not need to select a directory.

The path you selected is displayed in the Path: field.

- c. Left click on **OK**.

3.5 CONFIG MODE, CONTINUED

8. Left click on **File** or press Alt+F on the PC keyboard. Left click on **File Transfer**.

There are two files that must be downloaded; the operating system and the application software. The two files are:

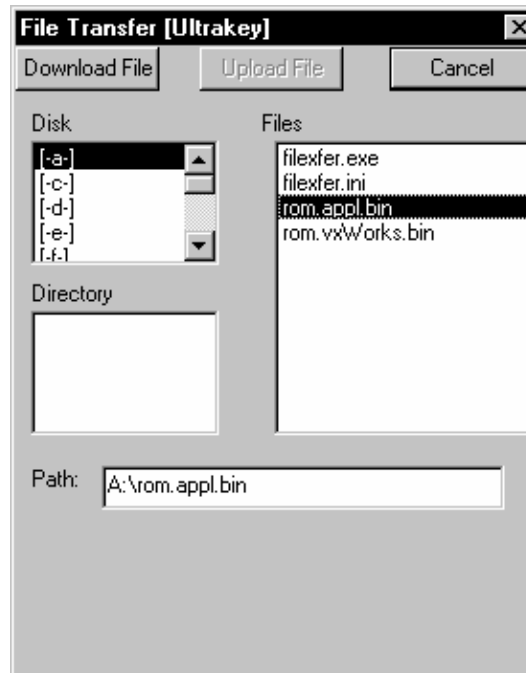
Operating System = rom.vxWorks.bin

Application Software = rom.appl.bin



WARNING: Both Files Must Be Downloaded Prior To Removing Power To The Controller. The Controller Will Not Be Functional If Power Is Removed Before Both Files Are Downloaded.

Download one file at a time. **Left click on the file to select it.** The file is selected when it is highlighted as shown below. The file being downloaded is displayed in the Path: field



9. Press the Upload/Download soft key in the CONFIGURATION MENU on the ULTRAKey. The SEND and RECEIVE Menu is displayed.
 - a. Press the Receive Any File soft key. The message, "You have chosen to receive data", is displayed. Press YES to continue receiving data. Press NO to end the operation.

NOTE: You have approximately one (1) minute to begin downloading a file after pressing YES before the unit times out and returns to the Send & Receive Menu.

3.5 CONFIG MODE, CONTINUED

10. Left click on **Download File** in the PC file transfer window.

A counter to show the file transfer is displayed in the PC window.

If you downloaded the operating system file (rom.vxWorks.bin), the message, "Download of RTOS firmware complete", is displayed on the ULTRAKey when the download is complete.

If you downloaded the application firmware file (rom.appl.bin), the message, "Download of Application firmware complete", is displayed on the ULTRAKey when the download is complete.

After the download is complete, the display on the ULTRAKey returns to the SEND and RECEIVE Menu.

11. You must power down the ULTRAKey and power it back up to use the new firmware.



WARNING: Make Sure You Have Downloaded Both Files Before Powering Down Unit. Wait Until The Download Complete Message Is Displayed Before Powering Down The Unit. The Flash Memory May Become Corrupted If Power Is Removed Too Soon After Downloading Firmware.

Note: If the configuration file is corrupted and the ULTRAKey does not come back online, refer to paragraph 4.2.1 for booting the ULTRAKey using the factory default configuration and erasing the configuration data.

3.5.9 Uploading/Downloading Data Files and Custom Settings

The user custom settings and data files can be uploaded to a PC for backup or can be downloaded from a PC to the ULTRAKey.

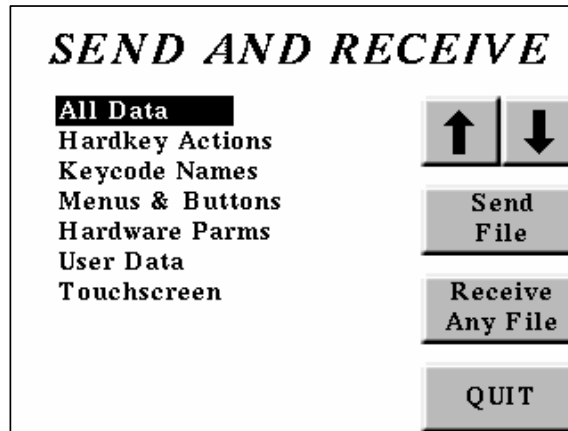
The PC must be connected to the ULTRAKey on COM 3 (RS-232 DB-9). The PC must have the file transfer software loaded and the communication settings of the port on the PC must be the same as the communication settings of COM 3 on the ULTRAKey. The recommended transfer baud rate is 38,400. COM 3 on the ULTRAKey must be set for File Transfer.

1. Set the ULTRAKey port settings for COM3 to File Trans and set the baud rate to the desired setting. Refer to paragraphs 3.5, 3.5.1, and table 2. Power down the ULTRAKey and power it back up.

NOTE: If COM3 is already set to File Trans, you do not need to power the unit down

3.5 CONFIG MODE, CONTINUED

2. Press the **Upload Download** soft key in the CONFIGURATION menu on the ULTRAKey.



3. Run the file transfer software on your PC. The file transfer software is located on the 3-1/2" floppy disk in the zip lock bag provided with the unit. The file name is **filexfer.exe**.

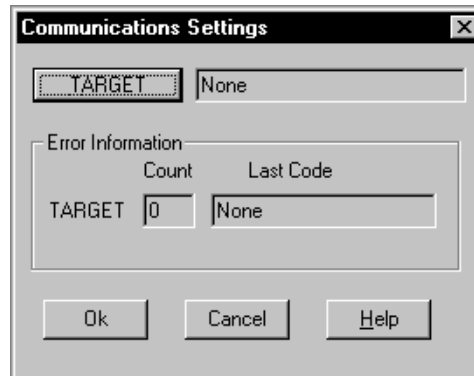
NOTE: The software can be run from the floppy disk or the files can be copied to your hard drive and run from the hard drive. If you chose to copy the files to your hard drive, the file filexfer.exe can be copied to the disk and directory of your choice. The filexfer.ini file must be copied to your Windows directory (Windows 95/98) or your Winnt directory (WindowsNT).

4. Double click on filexfer.exe. The following window opens.

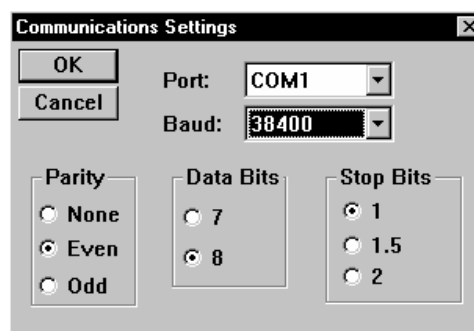


3.5 CONFIG MODE, CONTINUED

5. Left click on **Settings** or press Alt+S on the PC keyboard. Left click on **Port** or press P on the PC keyboard.



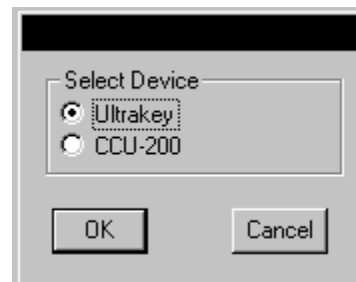
6. Left click on **TARGET** to define the communication settings for the COM port. The settings must match the communication settings for COM3 in the ULTRAKey.



- a. Set the **Port:** field to the port on the PC where the ULTRAKey is connected. Click on the down arrow beside the Port: field to display the available settings.
- b. Set the **Baud:** field to 38400 (recommended). This can be set to any of the available settings as long as COM3 on the ULTRAKey is set at the same rate.
- c. Set the **Parity, Data Bits, and Stop Bits.** Again, these settings must match the settings of COM3 on the ULTRAKey. **The data bits and stop bits must be set at 8 and 1, respectively.**
- d. Left click on **OK** to save settings.

3.5 CONFIG MODE, CONTINUED

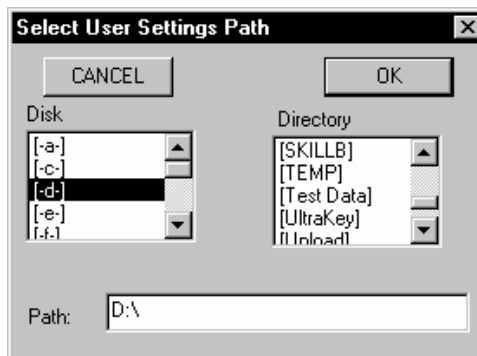
7. Left click on **Settings** or press Alt+S on the PC keyboard.
Left click on **Select Device**.
 - a. Select **ULTRAKey** by pointing to the radio button beside ULTRAKey. When selected, it should appear as shown above
 - b. Left click on **OK**.



3.5.9.1 Upload Data (Send File) from ULTRAKey

Perform the following procedures to upload (send) a file from the ULTRAKey to a PC.

1. Perform steps 1 through 7 in paragraph 3.5.9.
2. Left click on **Settings**, then left click on **Select Path**.



- a. Select the **Disk** where you want to store the data files, for example a: if you are copying to a floppy or d: if you are copying to your hard drive. The disk must be highlighted in the window.
- b. Select the **Directory** (if applicable) where you want to store the files. Note: If you are copying to a floppy, the files can be stored in the root directory so you will not need to select a directory. If you are copying files to your hard drive, you may want to create a directory such as ULTRAKey for saving the files. The path you select is displayed in the Path: field.
- c. Left click on **OK**.

3.5 CONFIG MODE, CONTINUED

3. Highlight the **data type or All Data** in the Send and Receive menu on the ULTRAKey display using the soft up and down arrow keys.
4. Press the **Send File** soft key on the ULTRAKey display. A message is displayed stating you have chosen to send file xxxxx.dat. xxxxx = the data file selected in step 7 above. Are you sure?
 - a. Press the **Yes** soft key to send the file.
 - b. Press the **No** soft key to end the file transfer.
5. If you pressed **Yes**, a counter is displayed on the PC to show the progress of the data being received. When the upload is completed, the window closes.

The PC transfer software saves the file from the ULTRAKey on the disk in the directory you chose. If you chose All Data, the software also creates individual files for the specific settings and data. The following is a list of the files the software creates. The All Data file or the individual files the software created can be downloaded to the ULTRAKey.

File Name	Description
alldata.dat	All Custom Settings and Data Files - includes all the files below
hkey.dat	Hard Key Actions (MAX Key commands and Menu Actions)
keynames.dat	Key Code Names (names programmed for MAX key actions)
menubutn.dat	Menus and Buttons (User-defined menus and Button names)
hardware.dat	Hardware Parameters
users.dat	Users and Passwords
touchscn.dat	Touch Screen Parameters

If you select a file to be uploaded and the settings have not been changed from the default parameters, the message "Block was not found in flash memory". You cannot upload a data file that has not been changed from the default parameters.

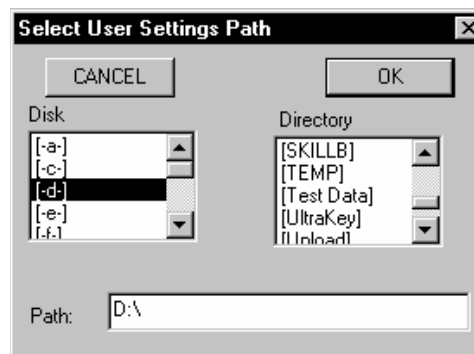
3.5 CONFIG MODE, CONTINUED

3.5.9.2 Download Data to ULTRAKey (Receive Any File)

Perform the following procedures to download a file from a PC to the ULTRAKey.

1. Perform steps 1 through 7 in paragraph 3.5.9.
2. Left click on **Settings**, then left click on **Select Path**.

- a. Select the **Disk** on the PC where the file you want to send to the ULTRAKey is located. For example a: if it is stored on a floppy or c: if it is stored on a hard drive. The disk must be highlighted in the window.



- b. Select the **Directory** (if applicable) where the file is stored. Note: the file can be stored in the root directory so you may not need to select a directory. The path you select is displayed in the Path: field.
- c. Left click on **OK**.
3. Left click on **File** or press Alt+F on the PC keyboard. Left click on **File Transfer**. The disk and directory you selected in step 2 above is displayed. **Select the file** you want to download (send) to the ULTRAKey by highlighting it. The location of the file and the file name is displayed in the Path field.
4. Press the **Receive Any File** soft key on the ULTRAKey LCD display. The message, "You have chosen to receive data?", is displayed.



NOTE: You have approximately one (1) minute to begin downloading a file after pressing YES before the unit times out and returns to the Send and Receive Menu.

- a. Press **Yes** to continue to receive data. If you press Yes, the message "Ready to Receive Data" is displayed.
- b. Press **No** to end the file transfer operation.
5. After pressing Yes, Left click on **Download File** in the PC file transfer window.

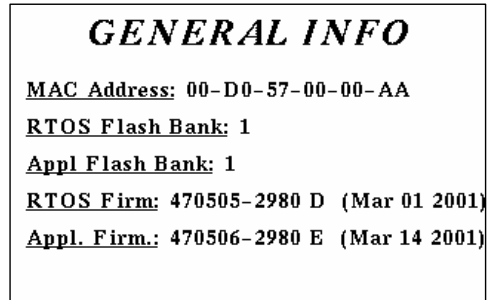
A counter to show the file transfer is displayed in the PC window. When the transfer is complete, the counter window closes.

The ULTRAKey LCD displays a message: RECEIVING DATA. When the transfer is complete, the message, "Download of setup data file complete", is displayed. The ULTRAKey display then returns to the Send and Receive Menu.

3.5 CONFIG MODE, CONTINUED

3.5.10 General Info

The General Info soft key displays the unit's MAC Address, the RTOS flash bank and the firmware number and revision level, the Appl flash bank and the firmware number and revision level. This screen is for information only and cannot be edited. The following illustration is an example of the General Info display. The RTOS Firmware and Application Firmware revision level and date on your display may be different.



Touch the screen anywhere to return to the CONFIGURATION menu.

3.6 Alphanumeric Entry Mode

The alphanumeric entry mode is used for setup purposes when the ULTRAKey interfaces to a MX14 controller or MXSYS04 subrack with a MX128E controller card. The alphanumeric entry mode is used to setup the MX14 controller or MX128E controller card and peripheral devices connected to them. A soft key on the ULTRAKey LCD display can be programmed to access the alphanumeric entry mode. Refer to paragraph 3.5.5, step 2, to assign a menu action to a soft key. Select the **Alphanumeric Entry** menu from the available menu listing.

To activate the alphanumeric entry mode, press the soft key on the LCD display that is assigned to the menu. When this menu is activated, the LCD screen displays the available alphanumeric characters.

Either jog on the ULTRAKey can be used to scroll through the available characters. Press any alphanumeric soft key to send its associated key code to the MX-14 controller. In addition, while in this mode, the ULTRAKey accepts alphanumeric entries from the numeric keypad on the ULTRAKey or from an AT keyboard connected to the ULTRAKey. All entries are sent to the MX-14 controller.

Quit							
Esc	Ins	Del	Bksp	Enter			
A	B	C	D	E	F	G	H
I	J	K	L	M	N	O	P
Q	R	S	T	U	V	W	X
Y	Z		-	←	→	↑	↓

Refer to Appendix A for the alphanumeric mode key codes.

NOTES:

SECTION 4: MAINTENANCE

4.1 PREVENTIVE MAINTENANCE

Use of preventive maintenance allows detection and correction of minor faults before they become serious enough to cause equipment failure. As a result, major repairs can be avoided, and the equipment can be maintained in an operable condition with a minimum of maintenance.

Every 3 months perform the following:

1. Inspect all interface connecting cabling for deterioration or other damage.
2. Clean the front panel with a soft cloth using any mild commercial cleaner.

4.2 TROUBLESHOOTING

If problems occur at the initial installation phase, verify the unit is installed in accordance with the procedures in Section 3 of this manual and the connectors are seated fully into the interconnecting equipment. To verify the function keys on the controller are operating correctly, refer to Section 3.5.4 of this manual.

Because this unit is just one part of an overall system, it may be necessary to verify that the other equipment types have been installed and are operating correctly before assuming the problem exists at the ULTRAKey. If problems still exist after verifying correct installation and the problem has been isolated to the controller, then it must be removed for servicing. **THERE ARE NO USER-SERVICEABLE PARTS COMPRISING THE ULTRAKEY UNIT. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.**

4.2.1 Booting with Default Configuration Parameters

If the Ultrakey does not come online after uploading a configuration data file, the uploaded file may be corrupt. To boot the ULTRAKey using the factory default configuration parameters, perform the following procedure.

1. While powering up the ULTRAKey, press and hold the ENT and FUNC keys until the main menu appears on the LCD.
2. Erase the faulty configuration data.
 - a. Access the Configuration Menu
 - b. Press the ALT and Hardware Config (softkey) keys. A prompt appears to Erase All Data.
 - c. Press the Erase All button to erase the bad configuration data.

4.3 RETURNING EQUIPMENT TO HONEYWELL VIDEO SYSTEMS

Any equipment returned to Honeywell for warranty or service repair must have an Authorization to Return Material (RMA) number prior to its return for repair. The RMA# must appear on all shipping containers and enclosed paperwork. Contact:

Honeywell Video Systems
Service Department
12220 Rojas
Suite A
El Paso, TX 79936
1-915-858-4595

APPENDIX A: KEY CODES

A.1 MX14 CONTROLLER AND MXSYS04 SUBRACK with aN MX128E CONTROLLER CARD

The following key code ranges have been defined for the MX14 controller and MXSYS04 subrack with a MX128E controller card.

Range	Function
1-141	ULTRAKey Defaults
200-249	Multiplexer command strings
250-258	Multiplexer select strings
300-331	Sequence Start, 0-31
340-371	Sequence Stop, 0-31
400-499	Preshot Recall 0-99
500-599	Macro Invoke 0-99
600-649	VCR command strings
650-682	VCR Select strings
800-927	ASCII codes of keys in alpha mode of ULTRAKey

The following table defines the alphanumeric entry mode key codes:

ULTRAKey Alphanumeric Entry Mode Key Codes	
Key code	Character
800	
801	
802	
803	
804	
805	
806	
807	
808	Backspace
809	Tab
810	
811	
812	
813	Carriage Return
814	
815	

ULTRAKey Alphanumeric Entry Mode Key Codes	
Key code	Character
816	
817	
818	
819	
820	
821	
822	
823	
824	
825	
826	
827	Escape
828	
829	
830	
831	

A.1 MX14 CONTROLLER AND MXSYS04 SUBRACK WITH AN MX128E CONTROLLER CARD, CONTINUED

ULTRAKey Alphanumeric Entry Mode Key Codes	
Key code	Character
832	SPACE
833	!
834	"
835	#
836	\$
837	%
838	&
839	'
840	(
841)
842	*
843	+
844	,
845	-
846	.
847	/
848	0
849	1
850	2
851	3
852	4
853	5
854	6
855	7
856	8
857	9
858	:
859	;
860	<
861	=
862	>
863	?
864	@

ULTRAKey Alphanumeric Entry Mode Key Codes	
Key code	Character
865	A
866	B
867	C
868	D
869	E
870	F
871	G
872	H
873	I
874	J
875	K
876	L
877	M
878	N
879	O
880	P
881	Q
882	R
883	S
884	T
885	U
886	V
887	W
888	X
889	Y
890	Z
891	[
892	\
893]
894	^
895	_
896	`
897	a

A.1 MX14 CONTROLLER AND MXSYS04 SUBRACK WITH AN MX128E CONTROLLER CARD, CONTINUED

ULTRAKey Alphanumeric Entry Mode Key Codes	
Key code	Character
898	b
899	c
900	d
901	e
902	f
903	g
904	h
905	i
906	j
907	k
908	l
909	m
910	n
911	o
912	p
913	q
914	r
915	s
916	t
917	u
918	v
919	w
920	x
921	y
922	z
923	{
924	
925	}
926	~
927	
928	
929	
930	
931	

ULTRAKey Alphanumeric Entry Mode Key Codes	
Key code	Character
932	
933	
934	
935	
936	
937	
938	
939	
940	
941	
942	
943	
944	
945	
946	
947	
948	
949	
950	Up Arrow
951	Down Arrow
952	Left Arrow
953	Right Arrow
954	End
955	Home
956	Insert
957	Delete
958	Pg Down
959	Pg Up
960	F1
961	F2
962	F3
963	F4
964	F5
965	F6

**A.1 MX14 CONTROLLER AND MXSYS04 SUBRACK WITH AN MX128E
CONTROLLER CARD, CONTINUED**

ULTRAKey Alphanumeric Entry Mode Key Codes	
Key code	Character
966	F7
967	F8
968	F9
969	F10
970	F11
971	F12
972	SF1
973	SF2
974	SF3
975	SF4
976	SF5
977	SF6
978	SF7
979	SF8
980	SF9
981	SF10
982	SF11

ULTRAKey Alphanumeric Entry Mode Key Codes	
Key code	Character
983	SF12
984	
985	
986	
987	
988	
989	
990	
991	
992	
993	
994	
995	
996	
997	
998	
999	Exit Programming

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